

ITER team predicts a limited operating window for acceptable divertor heat flux (comments by T. Rognlien)

- Information obtained at the recent IAEA-FEC and ITPA Divertor meetings in November (Portugal)
- Andrei Kuskushkin is the primary modeler for edge plasmas (using B2-EIRENE)
- Edge-plasma modeling forms the basis for divertor design - runs take ~2 months on a workstation
- Monte Carlo neutral model is state-of-the-art (Lyman- α still assume optically thin)
- Plasma modeling has important limitations
 - Ignores ExB and grad B particle drifts
 - Ignores carbon chemistry (methane, etc.)
 - Ignores strong convective plasma transport
- ELMs must be reduced - grassy regime has re-emerged

Edge-plasma modeling of ITER is still evolving

- Edge-plasma modeling for ITER assumes constant diffusive transport that yields small main-chamber plasma fluxes
- ITER modelers acknowledge that strong convective transport could be important, but argue that understanding is not complete - thus, say wait
- We have preliminary calculations that indicate convective transport leads to serious charge-exchange erosion of the chamber wall
- Next focus for ITER edge-plasma modeling will be radiation transport of Lyman- α , which is optically thick; will use extension to EIRENE for tracing photons